



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,658	09/18/2003	Stanton B. Gelvin	3220-94790	4633
<div>7590 Alice O. Martin Barnes & Thornburg P.O. Box 2786 Chicago, IL 60690-2786</div>			<div>EXAMINER ZHENG, LI</div>	
			<div>ART UNIT 1638</div>	<div>PAPER NUMBER</div>
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/19/2006	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/664,658

Applicant(s)

GELVIN ET AL.

Examiner

Li Zheng

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 6-8, 15 and 22-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-14 and 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6152006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's amendments to claims 1, 9, 14, 16 and 21, withdrawals of claims 6-8, 15 and 22-25, as well as the amendment to the specification filed on 9/29/2006 are acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The objections to the specification and claims are withdrawn due to Applicants' amendments to the specification and claims.
4. The rejections of claims 1-5, 9-14, and 16-21 under 35 U.S.C. 112 second paragraph are withdrawn due to claim amendment.

Claim Rejections - 35 USC § 112

5. Claims 16-21 remain rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for increasing Agrobacterium mediated transformation efficiency using host plant expressing H2A protein and L-cysteine as

Art Unit: 1638

antioxidant in cocultivation medium, does not reasonably provide enablement for a method for increasing *Agrobacterium* mediated transformation efficiency using host plant expressing H2A protein and any other antioxidant in cocultivation medium. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make/use the invention commensurate in scope with these claims, for the reasons of record stated in the Office action mailed May 30, 2006. Applicants traverse in the paper filed September 29, 2005. Applicants' arguments have been fully considered but were not found persuasive.

Applicants argue that Obregon et al. merely describe rice transformation that involved the use of cysteine or ascorbic acid, but do not involve use of a plant histone expressing transgenic plant to study the effect of an antioxidant (response, page 6, 1st paragraph in part III). The examiner submits that Obregon et al. do not need to teach all the limitations of the claim to show that the art of monocot transformation using the antioxidant is unpredictable. Applicants further argue that the law does not require the applicant to test and provide data for every conceivable antioxidant at all possible concentrations for all possible plant tissue material and testing for a suitable antioxidant at a suitable concentration does not require undue experiment (response, page 6, 1st paragraph in part III and page 7, 2nd paragraph). However, Applicants are not asked to test and provide data for every conceivable antioxidant at all possible concentrations for all possible plant tissue if the specification provides enough guidance about using any antioxidants in any plant so that undue experimentation is not required for a person skilled in the art to practice the invention. The specification, however, only teaches

Art Unit: 1638

using L-cysteine as an antioxidant in maize transformation. The specification does not provide guidance as to which compounds are good candidates for being an antioxidant in monocot plant transformation, and what range of concentration should be tested for. Even further, Applicants admit that Obregon et al. teach different suitable ranges of concentration for L-cysteine (response, page 8). Although the reference does not "teach away" from the instant disclosure in terms of using L-cysteine as an antioxidant, it does teach away from the disclosure in terms of optimized concentration of L-cysteine used in transformation. The factors to cause such difference are unknown, the reference nevertheless strongly supports that the art of using various antioxidants in transformation for various monocot plants is very unpredictable. As a result, for example, guidance from prior art can not be readily applied to the instant invention. Given the breadth of claim, lack of further guidance, and unpredictability of the art, undue experimentation would be required for a person skilled in the art to practice the instant invention.

Claim Rejections - 35 USC § 103

6. Claims 14, 16, 18 and 20 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Enriquez-Obregon et al. in view of Mysore et al., for the reasons of record stated in the Office action mailed May 30, 2006. Applicants traverse in the paper filed September 29, 2006. Applicants' arguments have been fully considered but were not found persuasive.

Applicants argue that the reference of Mysore et al. is a post-priority publication (response, page 8, 1st paragraph). The examiner disagrees for the reason stated on page 16, 3rd paragraph of previous office action mailed May 30, 2006.

Applicants further argue that Mysore et al. do not mention increase in transformation efficiency of monocot plants (response, page 8, 1st paragraph). The examiner disagrees because Mysore et al. teach that transgenic overexpression of H2A could increase the susceptibility of a plant to Agrobacterium transformation (lines 4-6 on right column of page 953). The said plant includes monocot and dicot since Agrobacterium transformation can be performed in both types of plant cells by a similar mechanism.

Applicants also argue that Obregon et al. teaches away from the present disclosure by stating that cysteine concentrations of 80 mg/l were not suitable for regeneration (response, page 8, 1st paragraph). The examiner disagrees. The reference does not "teach away" from the instant disclosure in terms of using L-cysteine as an antioxidant, although it does teach away from the disclosure in terms of optimized concentration of L-cysteine used in transformation. Claims 14, 16, 18 and 20 do not contain the limitation regarding to concentration of L-cysteine used in transformation.

Applicants finally argue that Obregon and Mysore cannot be properly combined and that all the limitations of the pending claims are not taught by the references (response, page 8, 1st and last paragraph). The examiner disagrees. First, the motivation to combine the references is well established given the teaching of Mysore et al. that transgenic overexpression of H2A could increase the susceptibility of a plant to

Art Unit: 1638

Agrobacterium transformation. Therefore, it would have been obvious to a person with ordinary skill in the art to modify the method of Obregon et al. by transgenically overexpressing the RAT5 gene of Mysore et al. Furthermore, contrary to the conclusion by Applicants, all the limitations of the pending claims-monocot plant (by Obregon et al.), increase in plant histone levels (by Mysore et al.), antioxidant (by Obregon et al.), and increase in transformation efficiency (by Mysore et al.), are taught by the references.

7. Claim 21 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Enriquez-Obregon et al. in view of Mysore et al. and Yu et al., for the reasons of record stated in the Office action mailed May 30, 2006. Applicants traverse in the paper filed September 29, 2006. Applicants' arguments have been fully considered but were not found persuasive.

In addition to reasons discussed above, Yu et al. further teach rice transformation using embryo, which is a plant zygotic material. Therefore, contrary to the conclusion by Applicants, all the limitations of the pending claims are taught by the references, and there was a reasonable expectation of success of increasing transformation efficiency.

8. Claim 17 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Enriquez-Obregon et al. in view of Mysore et al. and Narasimhulu et al., for the reasons of record stated in the Office action mailed May 30, 2006. Applicants traverse in the

Art Unit: 1638

paper filed September 29, 2006. Applicants' arguments have been fully considered but were not found persuasive.

In addition to reasons discussed above, Narasimhulu et al. further teach maize transformation. Therefore, contrary to the conclusion by Applicants, all the limitations of the pending claims are taught by the references, and there was a reasonable expectation of success of increasing transformation efficiency.

Double Patenting

9. Claims 1-5, 9, 12 and 13 remain rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-3 of U.S. Patent No. 6,696,622.

10. Claims 10-11 remain rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 6,696,622 in view of Goldman et al (U.S. Patent No. 5187073).

11. Claims 14, 16-18 and 20-21 remain rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 6,696,622 in view of Goldman et al, Yu et al., and Enriquez-Obregon et al.

12. Claims 1-5, 9, 12 and 13 remain provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 and 10-14 of copending Application No. 10,098,161.

Art Unit: 1638

13. Claims 10-11 remain provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-2 and 10-14 of copending Application No. 10,098,161 in view of Goldman et al.

14. Claims 14, 16-18 and 20-21 remain provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 and 10-14 of copending Application No. 10,098,161 in view of Goldman et al, Yu et al. and Enríquez-Obregon et al.

Applicants' intention to file appropriate terminal disclaimers, if any of the pending claims are found allowable, is acknowledged.

Summary

Claims 1-5, 9-14 and 16-21 are rejected.

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


Art Unit: 1638

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li Zheng whose telephone number is 571-272-8031. The examiner can normally be reached on Monday through Friday 9:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ASHWIN D. MEHTA
PRIMARY EXAMINER

